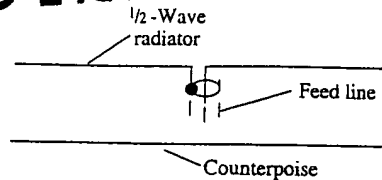


Appendix 2

Excerpts from Gibilisco, Stan, THE ILLUSTRATED DICTIONARY OF ELECTRONICS (6th ed.)



condenser antenna

making the output current alternate accordingly. Also called *capacitor microphone*.

condensing routine A computer program that takes an object (user written) program from an internal or external memory to punched cards in a way that maximizes the cards' storage capacity.

condensite A plastic insulating material whose base is phenol formaldehyde resin.

conditional Dependent on some external factor, and therefore subject to change.

conditional branch The point in a computer program where a relational test is performed and the statement line in which the test is made is left so that an out-of-sequence instruction can be implemented. Such a branch might be made, for example, following the BASIC statement "If Z = Y then go to (another line in the program)."

conditional branch instruction The instruction in a computer program that causes a conditional branch.

conditional implication operation A Boolean operation in which the result of operand values *a* and *b* are such that the output is high only if input *a* is high and input *B* is low. Also called *inclusion, if-then operation*.

conditional jump See **CONDITIONAL BRANCH**.

conditional stop instruction In a computer program, an instruction that can cause a halt in the run, as dictated by some specified condition.

conditional transfer See **CONDITIONAL BRANCH INSTRUCTIONS**.

condition code A set of constraints for a computer program. The condition code sets the limits on what can be done with the computer under certain circumstances.

conditioning 1. The process of making equipment compatible for use with other equipment. Generally involves some design or installation changes. 2. Interfacing.

Condor A continuous-wave navigational system giving a cathode-ray-tube display for automatically determining the bearing and distance from a ground station. Compare **BENITO**.

conductance Symbol, *G*. Unit, siemens. The ability of a circuit, conductor, or device to conduct electricity. Conductance is the reciprocal of resistance $G = 1/R = I/E$.

conducted heat Heat transferred by conduction through a material substance, as opposed to convection (movement of matter) and radiation (which

occurs through empty space). A heat sink conducts dissipated energy away from a transistor, for example.

conducting layer See **KENNELLY-HEAVISIDE LAYER**.

conduction 1. The propagation of energy through a medium, depending on the medium for its travel. 2. The transfer of electrons through a wire. 3. The transfer of holes through a P-type semiconductor material. 4. Heat transfer through a material object (see **CONDUCTED HEAT**).

conduction angle See **ANGLE OF CONDUCTION**.

conduction band In the arrangement of energy levels within an atom, the band in which a free electron can exist; it is above the valence band in which electrons are bound to the atom. In a metallic atom, conduction and valence bands overlap; but in semiconductors and insulators, they are separated by an energy gap.

conduction current 1. The electromagnetic-field flow that occurs in the direction of propagation. A measure of the ease with which the field is propagated. 2. Current in a wire or other conductor.

conduction-current modulation In a microwave tube, cyclic variations in the conduction current; also, the method of producing such modulation.

conduction electron See **FREE ELECTRON**.

conduction error In a temperature-acutated transducer, error caused by conduction of heat between the sensor and the mounting.

conduction field An energy field that exists in the vicinity of an electric current.

conductive coating A conducting layer applied to the glass envelope of a cathode-ray tube, such as an oscilloscope tube or picture tube. Also see **AQUADAG**.

conductive coupling See **DIRECT COUPLING**.

conductive material See **CONDUCTOR**.

conductive pattern The pattern of conductive lines and areas in a printed circuit.

conductivity Symbol, Σ . Unit, S/m (siemens per meter). Specific conductance, i.e., conductance per unit length. Conductivity is the reciprocal of resistivity: $\Sigma = 1/\rho$.

conductivity meter A device for measuring electrical conductivity. Generally, such a device is calibrated in mhos.

conductivity modulation In a demiconductor, the variation in conductivity resulting from variation of charge-carrier density.

conductivity-modulation transistor A transistor in which the bulk resistivity of the semiconductor material is modulated by minority carriers.

conductor 1. A material which conducts electricity with ease, such as metals, electrolytes, and ionized gases. Various materials vary widely in their suitability as conductors; the conductivity of commercial copper, for example, is almost twice that of aluminum. Compare **INSULATOR**. 2. An individual conducting wire in a cable, insulated or uninsulated.

conduit A hollow tube, made of plastic or metal,

MESFET A form of field-effect transistor combining depletion-mode and enhancement-mode properties. A Schottky barrier forms the gate electrode.

mesh 1. A combination of the elements that form a closed path in a network. 2. The closed figure (such as the delta or star) obtained by connecting polyphase windings together. 3. A grid, screen, or similar structure in an electron tube. 4. One of the flat, screen-like plates employed in a storage tube. Also see STORAGE MESH, STORAGE TUBE, and VIEWING MESH.

mesh equations Equations describing fully the current and voltage relations in a network of meshes (see MESH, 1).

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Mesny circuit A push-pull ultrahigh-frequency oscillator whose grid tank is a pair of parallel wires short-circuited by a slider; the plate tank is a similar pair of wires. The frequency is varied by moving the sliders along the wires.

mesochronous A condition for signals in which significant instants pass at identical average speeds, such as bits per second.

meson An unstable nuclear particle first observed in cosmic rays. A meson may be positive, negative, or neutral. Its mass lies between that of the electron and proton.

mesotron See MESON.

message 1. A body of information communicated between transmitter and receiver. 2. Data put into a transaction processing system.

message exchange In a digital communications channel, a hardware unit that carries out certain switching functions that would otherwise have to be done by a computer.

message switching system A data communications system having a central computer that receives messages from remote terminals, stores them, and transfers them to other terminals as needed.

metadyne See DC GENERATOR AMPLIFIER.

metal An elemental material which exhibits several familiar properties such as luster, ductility, malleability, good electrical and heat conductivity, relatively high density, and the ability to emit electrons. Common examples are aluminum, copper, gold, lead, and silver. Compare METALLOID and NONMETAL.

metal-base transistor A bipolar transistor in which the base is a metal film, and the emitter and collector are films of n-type semiconductor material.

metal-ceramic construction The building of certain electronic components by bonding ceramic parts to metal parts. Also see CERMET.

metal-film resistor A fixed or variable resistor in which the resistance element is a thin or thick film of a metal alloy deposited on a substrate such as a plastic or ceramic.

metal finder See METAL LOCATOR.

metallic binding forces In a crystal, the binding electrostatic force between cations and electrons. Also called *electron-gas binding forces*.

metallic bonding See BONDING, 1 and METALLIC BINDING FORCES.

metallic circuit A circuit, such as a two-wire telephone line, in which earth ground is not a part of the circuit. Compare GROUND-RETURN CIRCUIT.

metallic crystal A crystal substance in which there exist positive ions and free electrons and is therefore a good electrical conductor.

metallic insulator A short-circuited quarter-wave section of transmission line which acts as an insulator at the quarter-wavelength frequency.

metallize To make a circuit fully metallic, as when two wires are employed instead of one wire and a ground connection. (Not to be confused with METALLIZE.)

metallic rectifier A dry rectifier employing a metal disk or plate coated with a material such as selenium, an oxide, or a sulfide. See, for example, COPPER-OXIDE RECTIFIER; DRY-DISK RECTIFIER; MAGNESIUM-COPPER-SULFIDE RECTIFIER; SELENIUM RECTIFIER.

metallize To treat, coat, or plate with a metal. (Not to be confused with METALLICIZE.)

metallized capacitor A capacitor in which each face of a dielectric film is metallized to form plates. See, for example, METALLIZED-PAPER CAPACITOR and METALLIZED-POLYCARBONATE CAPACITOR.

metallized-paper capacitor A paper-dielectric capacitor whose plates are metal areas electrodeposited on each side of a paper film.

metallized-polycarbonate capacitor A fixed capacitor in which the dielectric is a polycarbonate plastic film, and the plates are metal areas electrodeposited on each face of the film.

metallized resistor See METAL-FILM RESISTOR.

metal locator An electronic device for locating underground metal deposits, pipes, or wires—or such objects hidden in walls or under floors—by means of the disturbance these objects cause to a radio frequency or magnetic field.

metalloid An element which has some of the properties of a metal. Examples of metalloid elements widely used in electronics are antimony, arsenic, germanium, silicon, and tin.

metal master See ORIGINAL MASTER.

metal negative See ORIGINAL MASTER.

metal-oxide resistor A resistor in which the resistance material is a film of tin oxide deposited on a substrate.

metal-oxide silicon field-effect transistor Abbreviation, MOSFET. A field-effect transistor in which the gate electrode is not a pn junction (as in the junction field-effect transistor) but a thin metal film insulated from the semiconductor channel by a thin oxide film. Gate control action, therefore, is entirely electrostatic. Drain and source electrodes

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